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Tracking Influenza-like Illness in Indiana

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To better understand the types of influenza viruses present in the United States each year, the Centers for Disease Control and Prevention (CDC) coordinates a nationwide tracking program that depends on data submitted by individual states. These data include the percentage of patients exhibiting influenza-like illness (ILI) and laboratory results of confirmed influenza cases. The Indiana State Department of Health (ISDH) tracks influenza and ILI in two ways: 1) sentinel surveillance and 2) syndromic surveillance. Due to heightened concern regarding the potential for pandemic influenza, influenza and ILI surveillance programs are essential.

Sentinel Surveillance

Indiana participates in the U.S. Influenza Sentinel Provider Surveillance program coordinated by the CDC. The ISDH has recruited 40 of the 1,000 health care providers around the country who report the percentage of patients with ILI seen in their offices each week on a year-round basis. The CDC defines ILI for the purpose of surveillance as "fever (>100^{o}F [37.8^{o}C] oral or equivalent) and cough or sore throat (in absence of a known cause)." Sentinel sites submit their data weekly to the repository at the CDC via Internet or fax. Additionally, sentinel physicians collect nasopharyngeal swabs from random patients with ILI whose onset of classic clinical signs started within 72 hours of the appointment. The swabs are sent to the ISDH Laboratories for viral isolation and identification to determine which influenza viruses are circulating.

To facilitate the process, the ISDH provides sentinel sites with viral specimen submission kits, delivery of kits to the sentinel site, prepaid overnight shipping from the site to the ISDH Laboratory, periodic reports of influenza incidence in Indiana and the nation, educational

opportunities regarding influenza and pandemic influenza, and a subscription to the *Journal of Emerging Infectious Disease* – all free of charge. Sentinel sites that regularly report their data receive an official certificate from the CDC and the ISDH. Physicians interested in serving in the sentinel surveillance program may contact Shawn Richards, Respiratory Epidemiologist, at 317.233.7125.

Syndromic Surveillance

The syndromic surveillance program in Indiana is known as the Public Health Emergency Surveillance System (PHESS). The PHESS depends primarily on emergency department patient chief complaint data from 70 hospitals across the state to estimate the level of ILI present during the winter influenza season. These chief complaint data are processed by a software application (ESSENCE) and are coded as ILI if they contain "influenza", "flu", or a combined complaint of "fever" and "cough" or "sore throat".

Both the sentinel program and the PHESS report ILI as a percentage. The number of patient visits resembling influenza serves as the numerator, and the total number of patient visits serves as the denominator (i.e., % ILI = (ILI pt visits / total pt visits) x 100). While the sentinel system data typically yield a weekly ILI percentage approximately 1 percent greater than the PHESS, the two surveillance systems reflect remarkable agreement regarding time series trending. The ISDH Respiratory Epidemiologist distributes weekly ILI percentages from sentinel sites and the PHESS, as well as data interpretation, to health care professionals in Indiana.

Influenza-Related Death Reporting

In addition to morbidity, mortality information from seasonal influenza is also very significant. The Centers for Disease Control and Prevention (CDC) estimates that during 1990-1999, approximately 36,000 influenza-related deaths occurred each year in the United States (1). Prior to October 2006, influenza death reports in Indiana were extracted exclusively from death certificates. Because of the delay in filing death reports and the tracking method, numbers of influenza-related deaths in Indiana were delayed for up to 1½ years. However, since October, 2006, all health care providers must report influenza-related deaths to the local health department within 72 hours of knowledge of the death. This mandatory reporting allows for much more timely data collection and analysis regarding influenza-related deaths.

References

1. Thompson WW, Shay DK, Weintraub E, et al. Mortality associated with influenza and respiratory syncytial virus in the United States. JAMA 2003;289:179--86.

Evaluating the State of Black Health in Indiana

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February is Black History Month. This long celebrated event reflects on the contributions made by Blacks to society as we know it today. From the brush you use every day (Lydia O. Newman), to the stoplight that you fuss at daily (Garret A. Morgan), there are many things that can be credited to the imagination, ingenuity, and process of a great people. Unfortunately, even with today's technology and health advancements, health disparities still exist, and Blacks suffer illnesses and death rates at one to two times more than their White counterparts.

This article addresses health disparities and how those disparities impact Blacks in Indiana. The 2005 U.S. Census Bureau's data show that 8.6 percent of Indiana's total population (or 522,377 people) are Black. Blacks are the largest racial minority in Indiana to date.

The U.S. Department of Health and Human Services defines health disparities as gaps in the quality of health and health care across racial and ethnic groups. The effects of these disparities are reflected in disease incidence, health outcomes, and health care access. Reasons contributing to health disparities include lack of health coverage, socioeconmic factors, linguistic barriers, cultural beliefs and differences, lack of providers, lack of education, discrimination, etc.

In Indiana, health disparities are everpresent within data collected. The leading causes of death for Blacks in Indiana in 2004 (the most recent data available) were:

Cause	Rank	African American/Black
Total		4,279
Diseases of heart	1	1,067
Malignant neoplasms	2	945
Cerebrovascular diseases	3	251
Diabetes mellitus	4	191
Assault (homicide)	5	175
Accidents	6	172
Nephritis, nephrotic syndrome and nephrosis	7	139
Chronic lower respiratory diseases	8	117
Septicemia	9	102
Certain conditions originating in the perinatal period	10	88
Alzheimer's disease	11	75
Essential (primary) hypertension & hypertensive renal disease	12	71
Influenza and pneumonia	13	51
Human immunodeficiency virus (HIV) disease	14	48
Chronic liver disease and cirrhosis	15	44

2004 Indiana Mortality Report, leading causes of death

Although these numbers may seem small, the age-adjusted death rates depict a larger disparity gap. For diabetes in Indiana, the 2004 total age-adjusted death rate was 26.3 per 100,000 population. The age-adjusted death rate for Blacks was 49.7 per 100,000 population.

Other diseases that have higher age-adjusted death rates for Blacks than for other races or ethnicities in Indiana include: heart disease, cancer, stroke, homicide, HIV/AIDS, and certain conditions during the perinatal period. In 2004, the infant mortality rate for Blacks was 17.1 per 1,000 live births compared to the rate for Whites, which was 6.9 per 1,000 live births. The state average was 8.1 per 1,000 live births. This example illustrates how some numbers for Blacks were more than double the state average.

Health disparities are also causing years of potential life to be lost. Years of Potential Life Lost (YPLL) is a measurement of premature mortality. When looking at specific state mortality rates, YPLL can be most helpful for planning and evaluating local public health interventions. For example, when looking at heart disease in Indiana, for 2004, Blacks had 10,984 years of potential life lost.

The numbers continue to show the same outcomes across different diseases. Through interventions such as the annual Black and Minority Health Fair at Indiana Black Expo or the INShape Indiana initiative from the Indiana State Department of Health and its partners, as well as other national, state, and local entities, programs and venues are being created or continue to grow to help stop this emergent rate of health disparities.

Much more must be done to reach the *Healthy People 2010* goal of eliminating health disparities among racial and ethnic minorities.

To quote Dr. Martin Luther King, Jr., "*Of all the forms of inequality, injustice in health care is the most shocking and inhumane.*"

Training Room

INDIANA STATE DEPARTMENT OF HEALTH IMMUNIZATION PROGRAM PRESENTS:

Immunizations from A to Z

Immunization Health Educators offer this FREE, one-day educational course that includes:

- Principles of Vaccination
- Childhood and Adolescent Vaccine-Preventable Diseases
- Adult Immunizations
    - Pandemic Influenza
- General Recommendations on Immunization
    - Timing and Spacing
    - Indiana Immunization Requirements
    - Administration Recommendations
    - Contraindications and Precautions to Vaccination
- Safe and Effective Vaccine Administration
- Vaccine Storage and Handling
- Vaccine Misconceptions
- Reliable Resources

This course is designed for all immunization providers and staff. Training manual, materials, and certificate of attendance are provided to all attendees. Please see the Training Calendar for presentations throughout Indiana. Registration is required. To attend, schedule/host a course in your area or for more information, please reference **http://www.IN.gov/isdh/programs/immunization.htm.**

ISDH Data Reports Available

The ISDH Epidemiology Resource Center has the following data reports and the Indiana Epidemiology Newsletter available on the ISDH Web Page:

http://www.IN.gov/isdh/dataandstats/data_and_statistics.htm

HIV/STD Quarterly Reports (1998-June 06)	Indiana Mortality Report (1999, 2000, 2001, 2002, 2003, 2004)
Indiana Cancer Incidence Report (1990, 95, 96, 97, 98)	Indiana Infant Mortality Report (1999, 2002, 2003, 2004)
Indiana Cancer Mortality Report (1990-94, 1992-96)	Indiana Natality Report (1998, 99, 2000, 2001, 2002, 2003, 2004)
Combined Cancer Mortality and Incidence in Indiana Report (1999, 2000, 2001, 2002)	Indiana Induced Termination of Pregnancy Report (1998, 99, 2000, 2001, 2002, 2003, 2004, 2005)
Indiana Health Behavior Risk Factors (1999, 2000, 2001, 2002, 2003, 2004, 2005)	Indiana Marriage Report (1995, 97, 98, 99, 2000, 2001, 2002)
Indiana Health Behavior Risk Factors (BRFSS) Newsletter (9/2003, 10/2003, 6/2004, 9/2004, 4/2005, 7/2005, 12/2005, 1/2006, 8/2006, 10/2006)	Indiana Infectious Disease Report (1997, 98, 99, 2000, 2001, 2002, 2003, 2004, 2005)
Indiana Hospital Consumer Guide (1996)	Indiana Maternal & Child Health Outcomes & Performance Measures (1990-99, 1991-2000, 1992-2001, 1993-2002, 1994-2003)
Public Hospital Discharge Data (1999, 2000, 2001, 2002, 2003, 2004, 2005)	

HIV Disease Summary

Information as of January 31, 2007 **(based on 2000 population of 6,080,485)**

HIV - without AIDS to date:

391	New HIV cases from February 2006 thru January 31, 2007	12-month incidence	6.80 cases/100,000
3,708	Total HIV-positive, alive and without AIDS on January 31, 2007	Point prevalence	64.46 cases/100,000

AIDS cases to date:

318	New AIDS cases from February 2006 thru January 31, 2007	12-month incidence	5.53 cases/100,000
3,934	Total AIDS cases, alive on January 31, 2007	Point prevalence	68.39 cases/100,000
8,149	Total AIDS cases, cumulative (alive and dead)		

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in January *MMWR* Weeks 1-4		Cumulative Cases Reported January *MMWR* Weeks 1-4	
	2006	2007	2006	2007
Campylobacteriosis	2	5	2	5
Chlamydia	1,586	1,585	1,586	1,585
E. coli O157:H7	2	0	2	0
Hepatitis A	1	0	1	0
Hepatitis B	0	0	0	0
Invasive Drug Resistant *S. pneumoniae* (DRSP)	710	692	710	692
Invasive pneumococcal (less than 5 years of age)	0	2	0	2
Gonorrhea	0	0	0	0
Legionellosis	0	1	0	1
Lyme Disease	0	0	0	0
Measles	0	0	0	0
Meningococcal, invasive	3	2	3	2
Mumps	1	5	1	5
Pertussis	3	13	3	13
Rocky Mountain Spotted Fever	0	2	0	2
Salmonellosis	9	3	9	3
Shigellosis	5	7	5	7
Syphilis (Primary and Secondary)	0	0	0	0
Tuberculosis	2	5	2	5
Animal Rabies	0	0	0	0

For information on reporting of communicable diseases in Indiana, call the *Epidemiology Resource Center* at 317.233.7125.

Indiana State Department of Health

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Cover photo of Cryo-EM reconstruction of a norovirus capsid.courtesy of Dr. B.V.V. Prasad, Baylor College of Medicine, Houston, TX 77030

The *Indiana Epidemiology Newsletter* is published monthly by the Indiana State Department of Health to provide epidemiologic information to Indiana health care professionals, public health officials, and communities.